Editorial Department.

RELATIONS OF WEATHER TO PAIN.

IN the April No. of the *American Journal of the Medical Sciences*, is an article by Dr. S. Weir Mitchell, on "The Relations of Pain to Weather, being a study of the Natural History of a case of Traumatic Neuralgia," illustrated by maps and charts, on which the relations in question are shown by curved lines. The study of the case shows that the occurrence of the pain has probably closer relations *to barometrical pressure*, than any other climatic factor, though it has relations apparently not so intimate to temperature, and possibly, electrical changes.

It is not claimed that these climatic variations produce neuralgia in healthy persons, but on the contrary in those who are suffering from some kind of nerve lesion. "Any lowering cause, such as dyspepsia, over work, and anæmia, however brought about, is apt to increase this sensitiveness to barometric changes, and so every enfeebling agency, as it were, tunes a man's nerves up to the capacity of producing pain, when once there exists a permanent cause in the way of neural disease." (P. 327.)

But Dr. Mitchell does not attempt an interpretation of the important relations, between climatic phenomena and neuralgia, which he has been at such pains to trace. We have for a long time past given attention to this subject, and in the present number, we have communicated some of the results of our observations in an article on the "Pathology and Treatment of Neuralgia." In that paper, after describing the material lesion which we believe to be the fundamental one in all true neuralgias, and on the basis of that lesion; an attempt is made to explain how climatic changes, such as variations in barometrical pressure, temperature, etc., may excite the attacks of pain in neuralgia.

We quote as follows:

"Then, again, vascular tension within the cranio-spinal cavity, may be produced by means of certain climatic changes, more particularly the following: In the first place, by changes in temperature. Either extremes of heat or cold, if they are suddenly brought to pass, may change blood tension in the cranio-spinal cavity. If the surface is suddenly exposed to cold, the skin and its small vessels contract, and as a consequence, less blood circulates in the surface, than is necessary to preserve an equilibrium, as between superficial and deep-lying parts, and hence more blood circulates in the visceral cavities, or tends to do so, than under different circumstances. Or, on the contrary, if the surface is more or less suddenly exposed to a high temperature, the cutaneous vessels dilate and admit more blood to the exterior of the body, and hence less relatively goes to the interior, thus giving rise frequently, though not necessarily, to diminished vascular tension, in the cranio-spinal cavity. Under such circumstances, it is very common for a person to complain of temporary loss of nerve power, or languor, and other symptoms which can hardly be ascribed to mere changes in nutrition, but in part, at least, to changes in pressure. Under such circumstances, neuralgias, *if the neuralgic condition exists*, are very likely to set in on slight provocation.

"In the second place, changes in barometric pressure, give rise, under the peculiar circumstances of the circulation in the cranio-spinal cavity, to changes in vascular pressure. This may be seen in extreme forms in the effects of high altitudes on the nervous system, and in the effects of increased atmospheric pressure, a good example of which is seen in the case of workmen operating in the condensed air of the caissons beneath the piers of certain bridges. The atmospheric pressure on the surface varies greatly from time to time, as is well known, and certainly leads to changes in vascular pressure within the air-tight, unyielding cavity, in which brain and cord lie. This, as I believe, from pretty close observation, is *one* of the prime exciting causes of the nervous symptoms,—and neuralgia is chief among them,—which seem to depend on the "weather." This view will also aid in explaining why steady, mild climates, are, as a rule, the most favorable to the removal of those nervous symptoms, which appear to be influenced by climatic changes. Within the past year, I have seen some unpublished charts, drawn up by Dr. S. Weir Mitchell, of Philadelphia, in which he had made the endeavor to trace, by means of lines which resembled isothermal and magnetic curves, the relations of neuralgia to certain climatic changes. I do not know what conclusions he may have reached, but it is a subject to which I have given considerable attention, and I am convinced that much of the influence exerted by climatic changes on certain nervous affections depends on variations in vascular pressure, produced by temperature and barometric changes operating in the way I have just described. I am far from thinking that these or similar exciting causes, can produce neuralgias in a healthy nervous system, but that they may do so, in cases where the 'neuralgic condition' already exists, as it so often does." * * * * *

It is said in another part of the same paper in regard to the nature of a neuralgia, and the final mode of operation of its causes that " the essential morbid condition in a neuralgia, is a nutritive lesion of the central sensory apparatus of cells, which are the seats of true nervous sensibility. This state is frequently caused by disease of the peripheral nerves, but even in such cases the more irritable state of the sensory tract is the main factor reached by judicious analysis of the phenomena of neuralgia. In this condition it reacts with pain to even trivial impressions made on the sensory nerves, which terminate in the affected region.

" The attack of pain may be due to over-excitation, and hence over-wear and waste of the affected centre, produced by the channel of its sensory nerves, or by changes in blood-pressure in the affected centre, caused by loss or increase of tonus of the peripheral vessels, or a change in cardiac action, or by changes of posture, or of temperature, or of barometrical pressure, or by influences acting on the vaso-motor nerves, distributed to the diseased centre, and which may be affected from either the peripheral nervous system, or from the cortex cerebri."

In this way it seems to us may we explain on the basis of established principles, and in apparently complete accordance with the facts, the *modus operandi* of climatic changes in the production or aggravation, and the disappearance also of nervous symptoms, chief among them being neuralgia and nervous languor.

THE ACTION OF COFFEE ON THE NERVOUS SYSTEM.

For some time past we have given attention to the physiological and therapeutic action of coffee. In this note it is our purpose to speak of some of the results of our observations, with a promise to give at some length hereafter, the facts, or what appear to us to be such, which we have accumulated.

Neither the facts nor the practical deductions we have been led to make, can be considered as novel.

We have been led to regard coffee as perhaps the purest *nerve stimulant* in the list of the materia medica. It appears to us to be worthily the type of its class. In its action on the nervous system, it differs from that of nerve tonics proper, in the following way: A nerve tonic is,— let us say,—a medicinal agent, which acts by stimulating the nutritive processes, as regards the nervous system. By such means we may hasten the intimate processes of nerve growth and nerve repair, and hence indirectly hasten the acquisition of nerve power. A nerve tonic does not, as a rule, contribute anything directly to the growth or repair of nerve tissue. It simply stimulates or quickens those processes on which the material and functional integrity of the nervous system depends. But a nerve stimulant does not act in this manner. Instead of contributing to the acquisition of nerve power, it hastens its expenditure. It excites the nerve activities proper, and not the nutritive processes upon which the acquisition of power depends. The action of the tonic is naturally followed by an increase of strength, of nerve force, while the action of a stimulant is followed by a period of exhaustion, varying in degree and duration. The one leads gradually to its results, the other much more rapidly. They act hence very differently and lead ordinarily to diametrically opposite results; viz., the one to an increase, the other to a waste or diminution of nervous energy.

If this distinction between the modes of action of tonics and stimulants on the nervous system, (though in a certain sense tonics are stimulants) is well founded, it is of practical importance to be remembered. In cases where there is abnormal nervous excitability, conjoined as it so often is with neurasthenia, and in which the indications are urgent, on the one hand for increased rapidity and effectiveness as regards the process of nerve nutrition, and on the other for tranquility,—freedom from excitement, diminution of nerve activity, and hence of waste of nerve structure and of power; the spontaneous dictate of common sense would be to give nerve tonics, and except in some emergency to avoid nerve stimulants. And after a prolonged trial, in accordance with a set purpose, such is the deliberate conclusion we have reached; viz.: *Except as a mere temporary remedial measure, to avoid nerve stimulauts as a rule, in the class of cases above described* in favor of nerve tonics, and on the grounds laid bare in the distinction drawn out above. Coffee as one of the purest of the nerve stimulants, falls into condemnation under this rule.

We have no hesitation in saying, not as something novel but believed to be true,—that in case of "nervous" or "neuralgic constitutions," in cases of neuralgia, insomnia, in many forms, and in almost all forms of chronic, or at least habitual neurasthenia, there is no one thing productive of more harm in a general and moderate way, than the use of strong coffee as a beverage. It temporarily excites the nervous system in such cases, only to lead to its speedy exhaustion, and to the multiplied though usually temporary ill-consequences of the same, such as depression of spirits, languor, loss of appetite, neuralgic symptoms, etc. It is true that the person who is well, especially if phlegmatic in temperament, may use it with comparative impunity. It is true that many persons are temporarily cheered by it to be let down again into the slough of despond, when its action has terminated, and it is true that it often allays a headache or some neuralgic pain, especially if about the head, as guarana will do. But aside from its use in such cases as we have named, as a remedial agent, in which it acts admirably, its habitual and free use as a beverage, in case of persons of a nervous constitution, as a rule, is only injurious. But we cannot in this notice do more than call attention to the subject. We shall treat it at greater length at another time, and among other things may speak of its supposed effects in diminishing waste of the nitrogenous tissues.

AMERICAN NEUROLOGICAL ASSOCIATION.

The third annual meeting of the American Neurological Association meets the 6th of June this year, in the city of New York.

From the circular which has been issued to the members, we extract the following:

"We earnestly appeal to you to contribute to the interest of the meeting by means of formal essays, by clinical notes of interesting cases, by the exhibition of gross or microscopical specimens, casts, photographs, new instruments, etc., or by physiological demonstrations.

"The committee of arrangements will spare no pains to provide means of demonstrating specimens, and of performing experiments, and they will also endeavor to make the reunion a pleasant one."

We would heartily commend the objects mentioned, to members of the association, and hope to see a full representation at the approaching meeting at New York.

After May the first, the office of publication of the JOURNAL will be No. 70 E. Monroe street, Chicago, to which place all communications should be addressed.

The title page for the last volume will be found bound in the present issue. It should have appeared in the October number of last year, but was inadvertently omitted.

A few typographical errors escaped notice while the earlier signatures of this issue were passing through the press, we here take the first opportunity to correct one or two of them. On page 282, for the proper names Ecker and Ramon, read Ekker and Ramaer, and on page 284, read Ekker instead of Ecker.

Also in our last number, (January), in the prescription given on page 193, the sign for ounces was used where that for drachms was the proper one. There are some other errors less important, but we will not take the space to notice them here.

The final part of the review of Dr. Ferrier's book on the "Functions of the Brain," has been crowded out of this number. It will appear in our July issue.